

Work Order ID 60986

August 3, 2010 2:54:57 PM



Page 1

Item ID: D350-636-011

Accept



Setup Start



Révision ID:

Stop



Item Name: Skidtube LH

Start Date: 8/03/10 Start Qty: 1.00



Cust Item ID:

Required Date: 8/12/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: *H*

Date: *20-8-03*

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D2750

Rev F

100

0.00



DC

DOCUMENT CONTROL

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-011 CHG 005

8/10/08/19

HJ for CL 10/08/19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

110

0.00



Skidtubes

Skidtubes

Memo

0.00

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.

4- Locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade fitting

5- Drill fwd step holes using DT9616. Ensure proper positioning.

6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-1 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B)
ONLY DRILL ONE SIDE OF FWD SADDLE HOLES USING DT81507- Clecko DT8863B on second side of tube and drill pilot holes for detail B.
SECOND SIDE

8- Clecko DT9642 and drill fwd saddle holes on second side, ensure proper positionning.

9-Open up holes for Detail B to 0.375" (4 holes per side) and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750. Open up holes for ground handling and detail C to 0.500" (8 holes per side)

10-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to

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Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

0.297".

11-Open up holes of Detail A to 0.297" (total of 2 holes per side)

12-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left from bending as per QSI 004

A/R Aluminum Rod batch: M114242

13-Grind welds flush as per Dwg D2750

DP

10-8-10

8E 10-8-11

120



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

Soloslu

130



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Soloslu

AD

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Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160

0.00



Skidtubes

Skidtubes

Skidtubes

Memo

0.00

1-Open up holes of Detail C and ground handling to 0.625" (total of 8 holes per side)
as per dwg D2750.2-Open up holes of Detail B to 0.750" (total of 4 holes per side)
as per dwg D2750.

3- Open float hole to 0.500" (4 per side)

4-Chamfer holes of Detail B, C, ground handling and float holes per dwg D2750
(welding instructions on sheet 8)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R ☐☐☐ Sikaflex-291 batch: M115114 ☐☐☐
exp. date: 11-1-308- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004
(welding instructions on sheet 8)A/R ☐☐☐ Aluminum Rod batch: M114 242

9- At section AJ-AJ drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D2750

Dart Aerospace Ltd

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Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



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11-Spot face ground handling holes section (total of 4 places per side) as per
dwg D2750

BE 10/08/17

12-Deburr holes

BE 10/08/17

170



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds 0.00

Memo

0.00

8/10/08/17

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O 0.00

Memo

0.00

8/10/08/17

(XO)

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190 HandFinish	Pressure Wash per QSI005 4.3	0.00				ml	10	08	17 ①
Hand Finishing	Memo Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.	0.00							
200 Powdercoat	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00				ml	10	08	18 ①
Powder Coating	Memo START TIME: 7:00 320° OVEN TEMPERATURE: FINISH TIME: 7:30	0.00							
210 QC	QC3- Inspect Part Finish	0.00				1	0		
Quality Control	Memo Inspect for foreign object per QSI 024	0.00							

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Customer:

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220		0.00							
	HandFinishing								
HandFinish	Memo	0.00							
Hand Finishing	1- Install inserts as per Dwg D2750								
230		0.00							
	HandFinishing								
HandFinish	Memo	0.00							
Hand Finishing	1-Inspect for Foreign Objects								
	2-Spray inside of tube with "LPS-3" batch: 10/17								
	3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D2750								
	SIKA FLEX 241								
	BATCH: 11115114								
	EXP DATE: 11101								
	4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube								
	A/R 55-o'ring lube batch: 11114189								
	5-Coat all exposed fasteners with "LPS Procyon" batch: 11114596								

ml 10 08 18 (1)

=> Hl 10/08/18

1 0

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Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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240

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

MA 10 08 18 (1)

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

10/8/19

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

*****ensure antiseize is on AN8C21A bolts*****

8/10/08/19

10

Dart Aerospace Ltd

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270 	Packaging	0.00							
Packaging	Memo	0.00							
Packaging	Package as per PPP D350-636-011								
			LOC 78						
			REV H						
280 	QC21- Final Inspection - Work Order Release	0.00							
QC	Memo	0.00							
Quality Control									

10/08/19 SP

10/08/19

CMF
10-8-19

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Picklist Print

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Parent Item Name: Skidtube LH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-23 As per Rev D JLM
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates(Rev E) JLM Verified By: EC
 IPP Rev: M 08-04-22 update steps 4, 13 DD verified by: EC
 IPP Rev: N 08-09-23 revF as per dwg DD verified by: ec
 IPP Rev: O 09-02-06 apply antiseize on AN8C21A bolts as per PAR09-010
 DD verified by: EC IPP Rev: P 10.06.22
 revise seq 110 DD verf: EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2594-3		Manufactured	No			230	Each	379.0000	8	8			
---------	--	--------------	----	--	--	-----	------	----------	---	---	--	--	--



O-Ring, 205 Skidtube

Location	Loc Qty	Loc Code
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FP	379	
55546	19	
58191	12	
59358	348	

D2744		Manufactured	No			110	Each	38.0000	1	1			
-------	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--



Cap

Location	Loc Qty	Loc Code
----------	---------	----------

LG	38	
51922	2	
59198	36	

D2600-3-BENT		Manufactured	No			110	Each	16.0000	1	1			
--------------	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--



Extrusion Bent

Location	Loc Qty	Loc Code
----------	---------	----------

LG	16	
59410	16	

X8 ul 10/08/18

1 BE 10/08/11

DD 10-8-10

Dart Aerospace Ltd

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Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

D2743 Manufactured No 160 Each 299.0000 8 8



Crossbolt Spacer

Location Loc Qty Loc Code

LG 299
50281 10
57953 2
59111 287

8 BE 10/08/12

D2739 Manufactured No 160 Each 1.0000 1 1



350 I Beam

Location Loc Qty Loc Code

LG 1
59406 1

DP 10-8-11

D3490-3 Manufactured No 160 Each 54.0000 4 4



Cross Bolt Spacer

Location Loc Qty Loc Code

LG 54
59229 14
60294 40

4 BE 10/08/12

D3490-1 Manufactured No 160 Each 19.0000 4 4



Cross Bolt Spacer

Location Loc Qty Loc Code

LG 19
59424 19

4 BE 10/08/12

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Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-225

Purchased

No

220

Each

5,957.000

38

38



Insert

Location

Loc Qty

Loc Code

PK011

5957

110768

5957

D3492-041

Manufactured

No

230

Each

93.0000

8

8



Plug Assembly

Location

Loc Qty

Loc Code

FP013

93

59114

24

59420

69

D3793-3

Manufactured

No

230

Each

13.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP18

12

59631

12

FP19

1

57947

1

AN8C35A

Purchased

No

230

Each

58.0000

1

1



BOLT

Location

Loc Qty

Loc Code

FP

1

110847

1

ST346

57

114442

27

115188

30

X38 M 10/08/10

X8 M 10/08/10

X1 M 10/08/10

X1 M 10/08/10

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Shop Packet Print

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Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

D3793-1

Manufactured No

230

Each

15.0000

1

1



Wearshoe



Location

Loc Qty

Loc Code

FP18

15

59151

2

59630

13

D3488-041

Manufactured No

230

Each

18.0000

1

1



Blade Fitting Assembly, LH



Location

Loc Qty

Loc Code

FP

11

53915

11

FP007

7

56052

7

D3794-3

Manufactured No

230

Each

24.0000

1

1



Gasket



Location

Loc Qty

Loc Code

FP10

12

60826

12

FP18

12

56066

11

59153

1

xt 10/08/15

xt 10/08/15

xt 10/08/15

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Work Order ID: 60986

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

AN6C44A

Purchased

No

230

Each

177.0000

4

4



BOLT

Location

Loc Qty

Loc Code

FG

2

103964

2

ST344

175

111649

2

114653

1

114784

47

114941

75

115030

50

XU 10/08/18

MS21083C8

Purchased

No

230

Each

58.0000

1

1



NUT

Location

Loc Qty

Loc Code

ST303

58

113845

7

114934

51

XU 10/08/18

D3536-25

Manufactured

No

230

Each

29.0000

1

1



Gasket

Location

Loc Qty

Loc Code

FP12

29

58820

5

59625

24

XU 10/08/18

August 3, 2010 2:55:01 PM

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Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 6

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Work Order ID: 60986

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

D3631-1 Manufactured No 230 Each 571.0000 8 8



Washer

Location Loc Qty Loc Code

ST072 297

60755 297

ST076 274

52693 206

54388 68

x8 10/08/18

D3791-1 Manufactured No 230 Each 20.0000 1 1



Wearplate

Location Loc Qty Loc Code

FP17 20

58573 11

59626 9

x1 10/08/18

AN960C10L Purchased No 230 Each 29.0000 38 38



washer

Location Loc Qty Loc Code

ST245 29

107534 29

1115000

x38 10/08/18

D2745 Manufactured No 230 Each 169.0000 8 8



Bushing

Location Loc Qty Loc Code

ST023 169

52311 5

59112 164

x8 10/08/18

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Page 6

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 7

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Work Order ID: 60986



Parent Item: D350-636-011



Parent Item Name: Skidtube LH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

AN3C5A

Purchased

No

230

Each

1,364.000

34

34



Bolt

Location

Loc Qty

Loc Code

ST350

1354

114330

11

115015

743

115108

300

115316

300

ST351

10

113121

10

D3537-1

Manufactured

No

230

Each

13.0000

3

3



Wearpad

Location

Loc Qty

Loc Code

FP

1

55465

1

FP17

12

57713

3

59593

9

AN960C816L

Purchased

No

230

Each

23.0000

1

1



WASHER

Location

Loc Qty

Loc Code

ST348

23

110584

20

111424

3

X34 10/08/18

1360192 X3 10/08/18

X1 10/08/18

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Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 60986

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

D3492-043

Manufactured No

230

Each

51.0000

8

8



Plug Assembly

Location

Loc Qty

Loc Code

FP

2

54682

2

FP013

49

59117

1

59190

4

59421

14

60712

30

xs 24 10/08/10

AN3C6A

Purchased

No

230

Each

425.0000

4

4



BOLT

Location

Loc Qty

Loc Code

ST351

425

111982

425

xs 24 10/08/10

NAS1611-013

Purchased

No

230

Each

67.0000

8

8



O-RING

Location

Loc Qty

Loc Code

FP

67

114451

51

114496

16

xs 24 10/08/10

D3535-25

Manufactured

No

230

Each

24.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP18

24

59623

24

xs 24 10/08/10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 9

Work Order ID: 60986

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

D3794-1 Manufactured No 230 Each 19.0000 1 1



Gasket



Location

Loc Qty

Loc Code

FP010

19

57942

18

59627

1

V1 22 10/08/10

MS21043-6 Purchased No 230 Each 726.0000 4 4



NUT



Location

Loc Qty

Loc Code

ST301

726

112314

726

X4 22 10/08/10

D3493-1 Manufactured No 260 Each 55.0000 2 2



Washer



10/8/1981

Location

Loc Qty

Loc Code

ST065

55

59127

25

60873

30

2

MS21083C8 Purchased No 260 Each 58.0000 1 2



NUT



10/8/1981

Location

Loc Qty

Loc Code

ST303

58

113845

7

114934

51

2

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Page 9

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Work Order ID: 60986



Parent Item: D350-636-011



Parent Item Name: Skidtube LH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

AN8C21A
BOLT

Purchased No 260 Each 59.0000 2



2
10/8/10 SP

Location Loc Qty Loc Code

ST345 59
113558 19
114653 40

2

AN960C816L
WASHER

Purchased No 260 Each 23.0000 1



2
10/8/10 SP

Location Loc Qty Loc Code

ST348 23
110584 20
111424 3

2

D3672-1
Phenolic Washer

Manufactured No 230 Each 1,011.000 4



4

Location Loc Qty Loc Code

ST077 993
51674 5
52505 988
ST117 18
34470 18

24 10/08/10

D2741
Blade, 350 Skidtube

Manufactured No 260 Each 22.0000 1



1
10/8/10 SP

Location Loc Qty Loc Code

ST466 22
55905 2
57949 20

1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 11

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Work Order ID: 60986



Parent Item: D350-636-011



Parent Item Name: Skidtube LH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

D3532-1

Manufactured No

260

Each

33.0000

2

2



Spacer



10/8/10

Location

Loc Qty

Loc Code

ST068

33

59426

11

60510

22

2

D3672-13

Purchased

No

260

Each

844.0000

2

2



Phenolic Washer



10/8/10

Location

Loc Qty

Loc Code

ST077

844

54363

844

2

August 3, 2010 2:55:01 PM

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8

7

6

5

4

3

2

1

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1			D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

SHOW COPY
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ENGINEERING
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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 60986
B-10-7-03

RELEASED
6-27-77

GENERAL NOTES:

- MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- WELD PER DART QSI 004
- INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES ($\phi 0.297$) FOR WEARSHOE INSERTS
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

F	INCORPORATE DSI 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/3 REPLACES D3535-13/35 (ZN C8-1); D3794-1/3 REPLACES D3536-13/35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON: REF. NCR 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS, CHANGE INSERTS, ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515HBL; REMOVE D2741, QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEO 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.07.16		

DART AEROSPACE USA, INC.
PORT HADLOCK, WA

DRAWING NO. **D2750** REV. F
SHEET 1 OF 11
TITLE **350 SKIDTUBE ASSEMBLY** SCALE NTS

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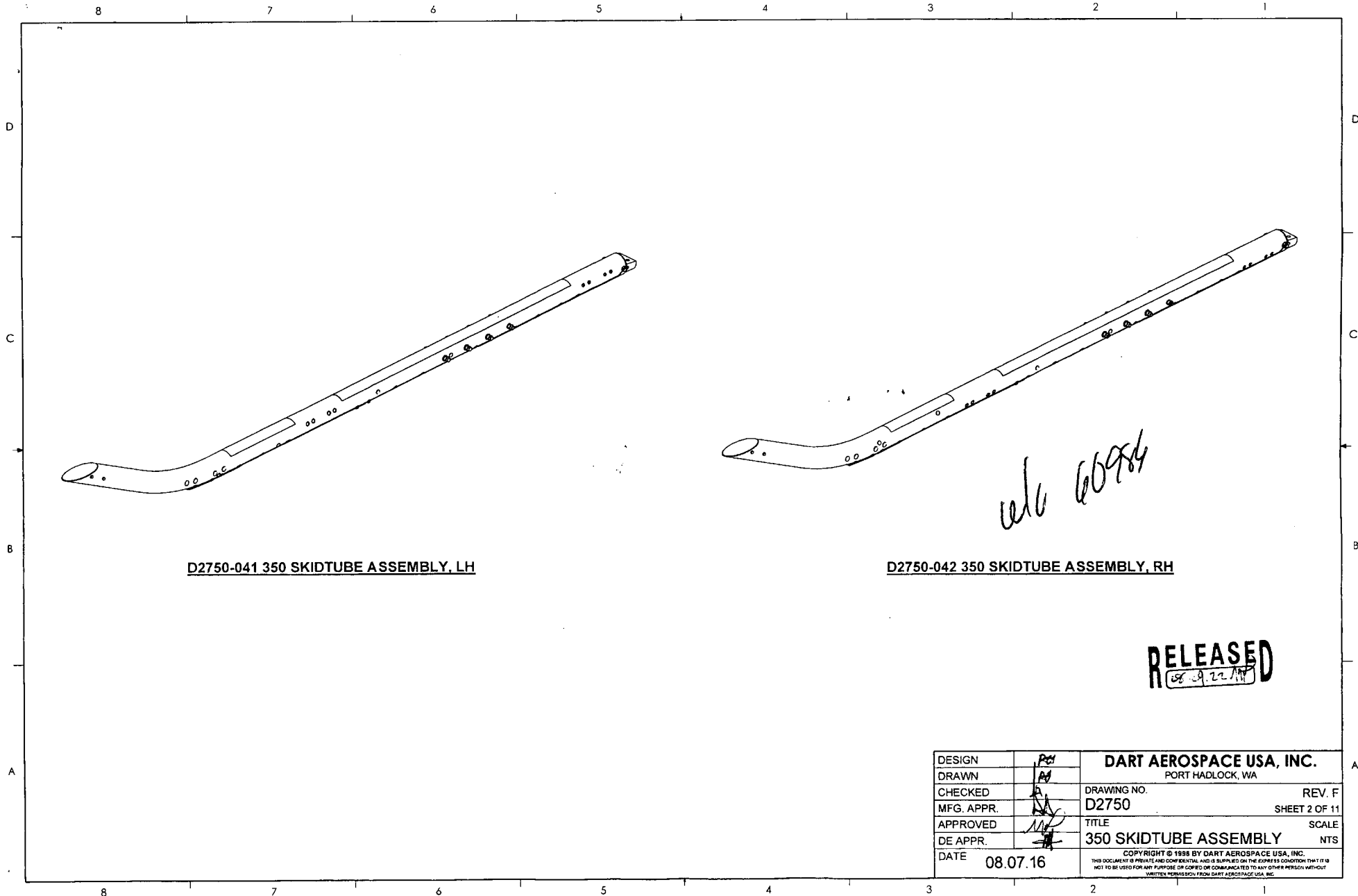
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



WLC 66984

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 68-09-22-111

DESIGN	PCY	DART AEROSPACE USA, INC.	
DRAWN	AM	PORT HADLOCK, WA	
CHECKED	AM	DRAWING NO.	REV. F
MFG. APPR.	AM	D2750	SHEET 2 OF 11
APPROVED	AM	TITLE	SCALE
DE APPR.	AM	350 SKIDTUBE ASSEMBLY	NTS
DATE	08.07.16	<small>COPYRIGHT © 1988 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

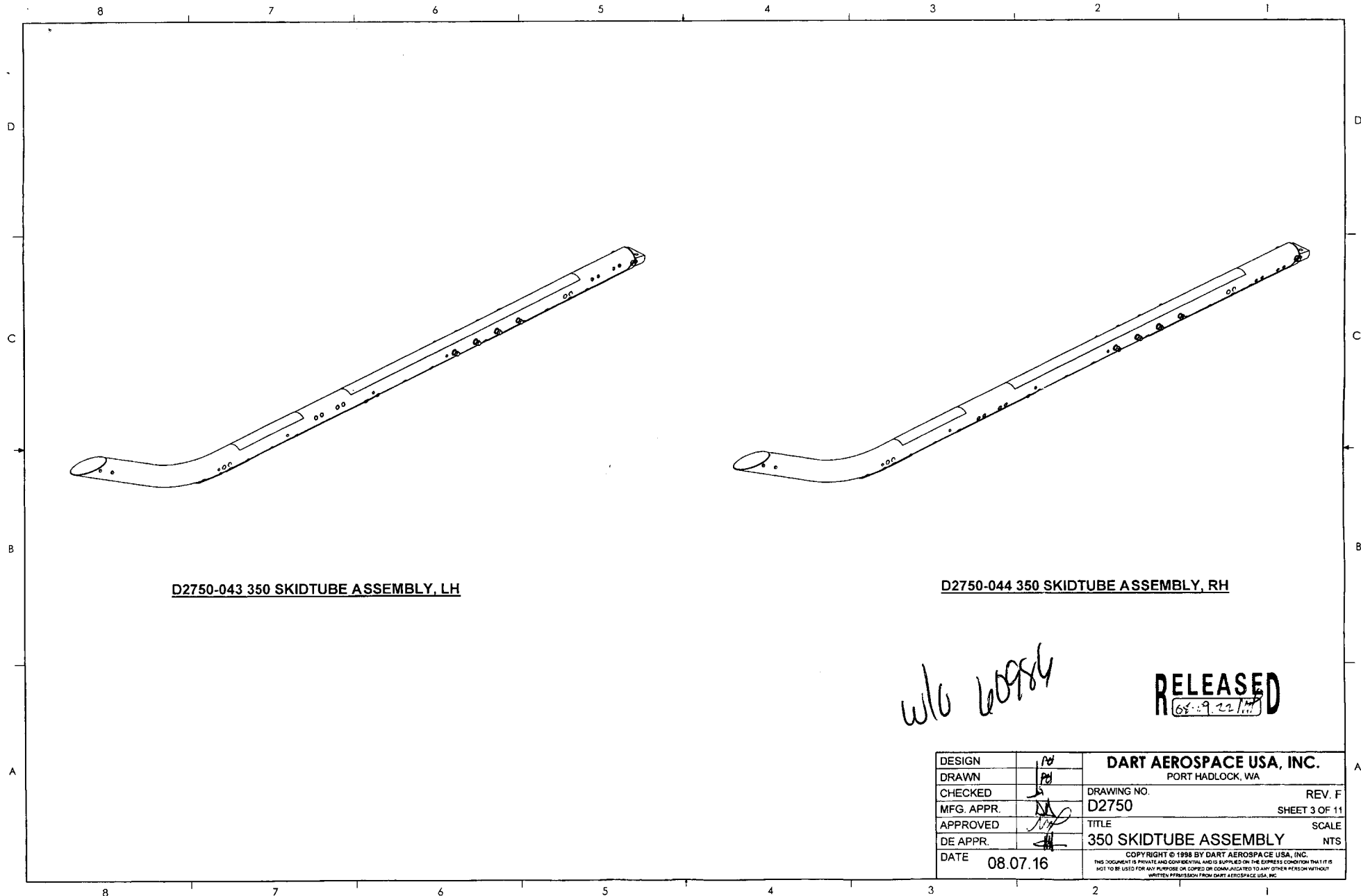
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2750-043 350 SKIDTUBE ASSEMBLY, LH

D2750-044 350 SKIDTUBE ASSEMBLY, RH

wlc 60984

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CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2750	SHEET 3 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	08.07.16	<small>COPYRIGHT © 1998 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

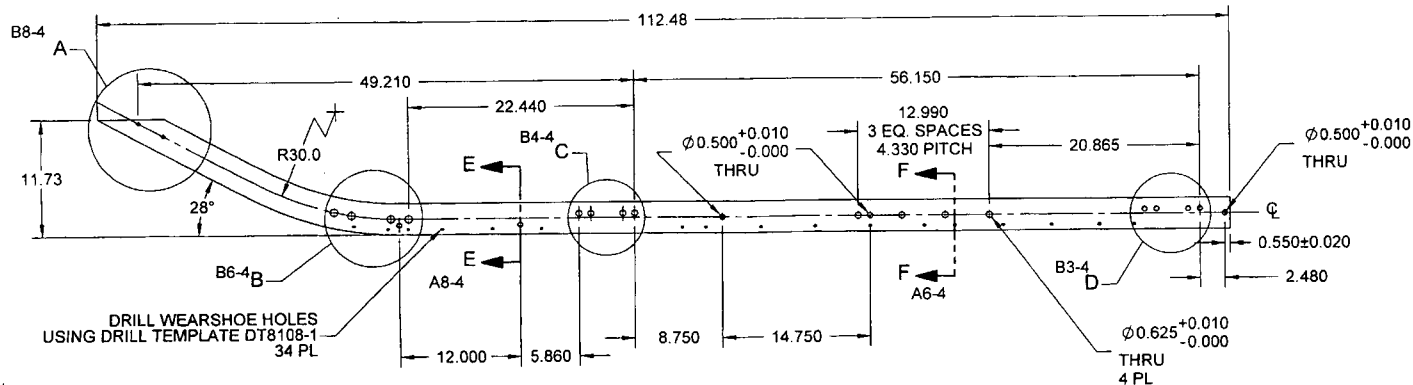
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

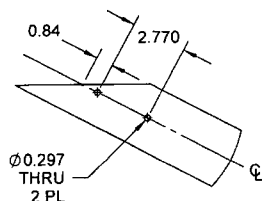
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

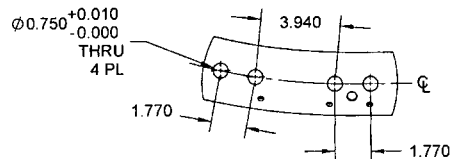
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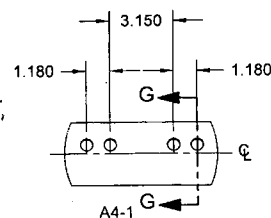
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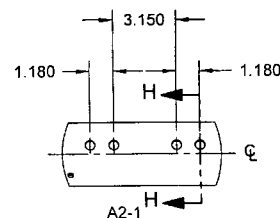
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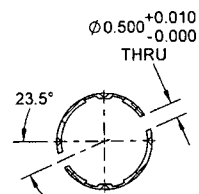
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SCALE 2X



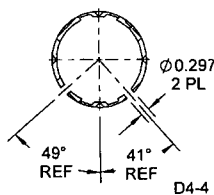
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SCALE 2X



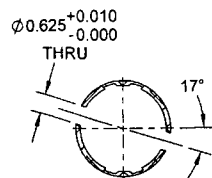
DETAIL D
SCALE 2X



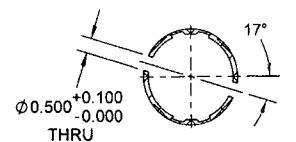
SECTION E-E
SCALE 3X, 2 PL



SECTION F-F
SCALE 3X, 17 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

DESIGN	D2750	DART AEROSPACE USA, INC.	
DRAWN	JPB	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2750	SHEET 4 OF 11
APPROVED		TITLE	SCALE
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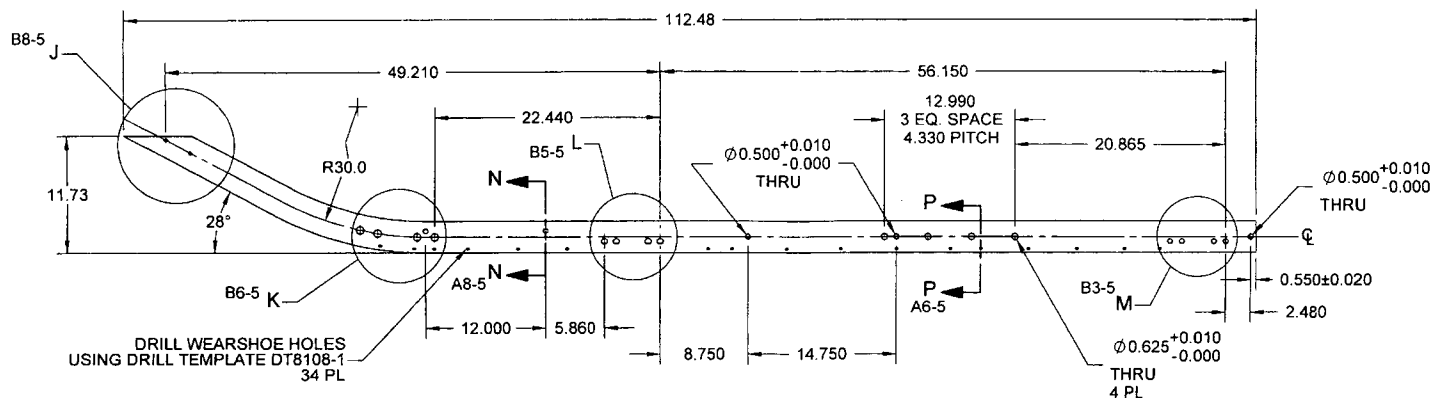
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

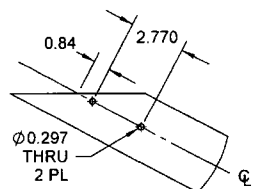
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

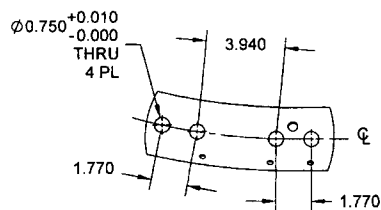
NOTE: Date & initial all entries



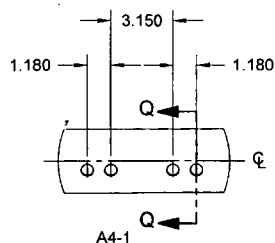
D2750-2 RH SKIDTUBE



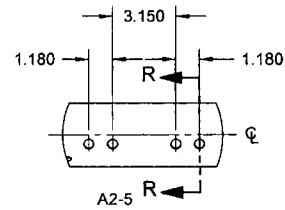
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SCALE 2X



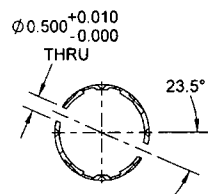
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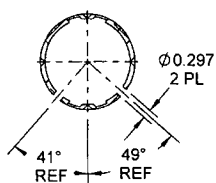
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SCALE 2X



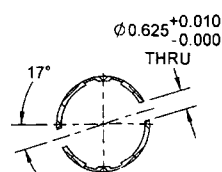
DETAIL M
SCALE 2X



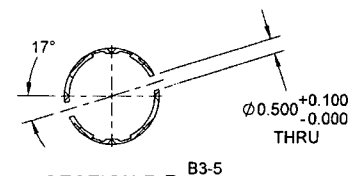
SECTION N-N
SCALE 3X, 2 PL



SECTION P-P
SCALE 3X, 17 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

WLB 60782

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08.07.16

DESIGN		DART AEROSPACE USA, INC.	
DRAWN		PORT HADLOCK, WA	
CHECKED		DRAWING NO. D2750	REV. F
MFG. APPR.		TITLE	SHEET 5 OF 11
APPROVED		350 SKIDTUBE ASSEMBLY	
DE APPR.		SCALE	
DATE 08.07.16		NTS	

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8

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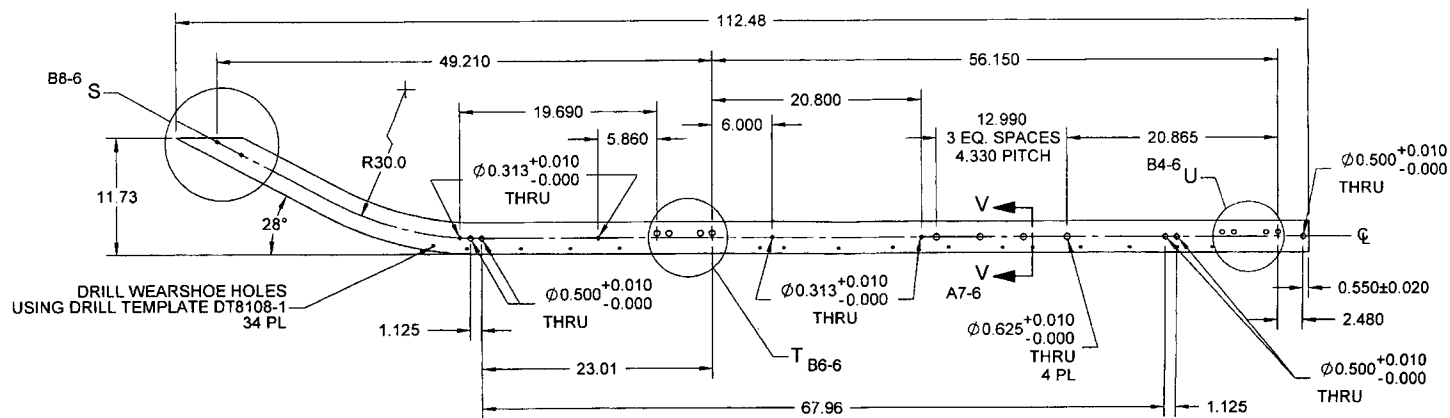
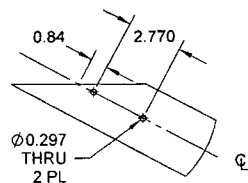
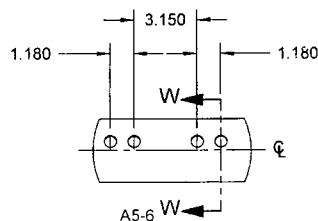
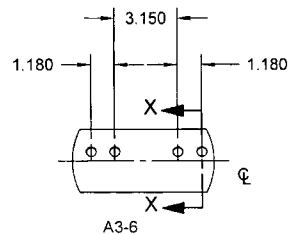
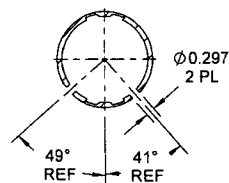
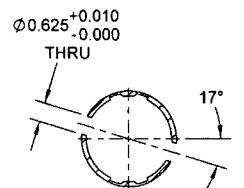
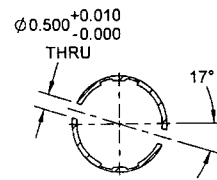
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
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**D2750-3 LH SKIDTUBE****DETAIL S**
D8-6
SCALE 2X**DETAIL T**
C5-6
SCALE 2X**DETAIL U**
D3-6
SCALE 2X**SECTION V-V**
C4-6
SCALE 3X, 17 PL**SECTION W-W**
B6-6
SCALE 3X, 4 PL**SECTION X-X**
B4-6
SCALE 3X, 4 PL

w/o w986

RELEASED
08-22-11

DESIGN		DART AEROSPACE USA, INC.	
DRAWN		PORT HADLOCK, WA	
CHECKED		DRAWING NO. D2750	REV. F
MFG. APPR.			SHEET 6 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	08.07.16	COPYRIGHT © 1998 BY DART AEROSPACE USA, INC. <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

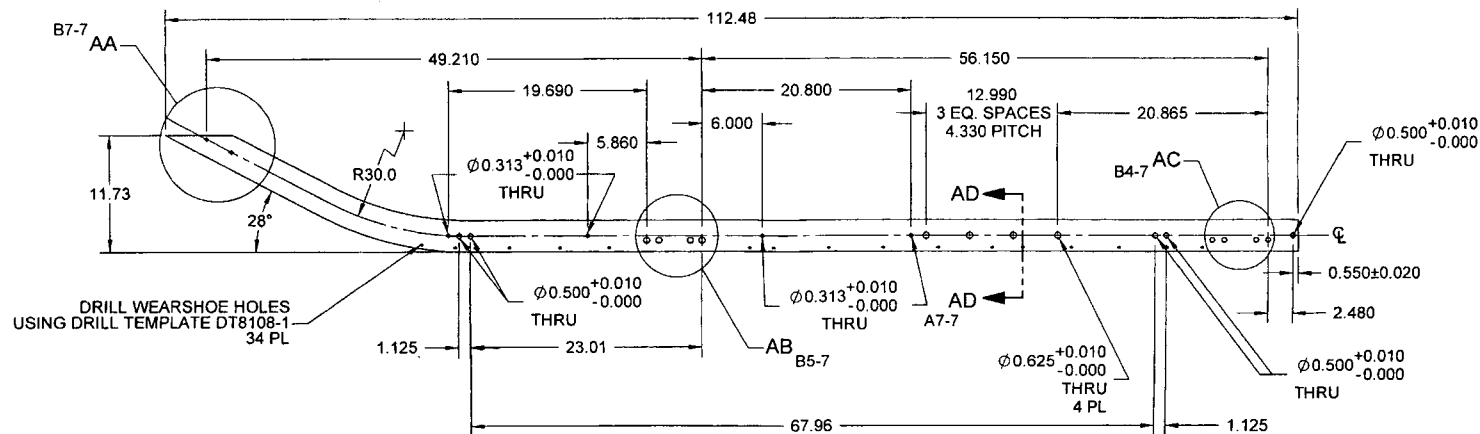
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

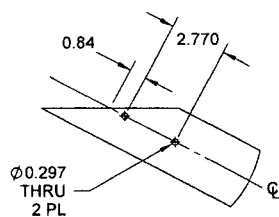
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

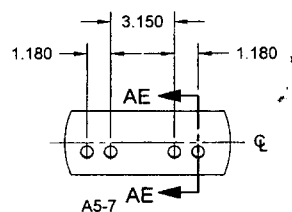
NOTE: Date & initial all entries



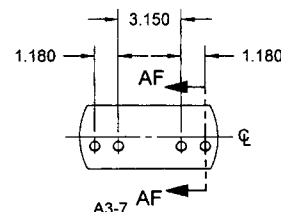
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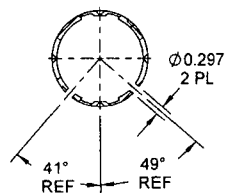
DETAIL AA
SCALE 2X



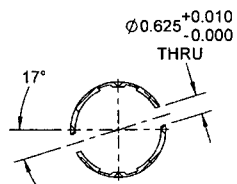
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SCALE 2X



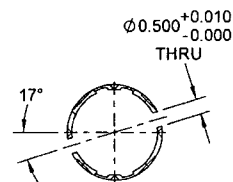
DETAIL AC
SCALE 2X



SECTION AD-AD
SCALE 3X, 17 PL



SECTION AE-AE
SCALE 3X, 4 PL



SECTION AF-AF
SCALE 3X, 4 PL

w/o work

RELEASED

DESIGN	<i>RA</i>	DART AEROSPACE USA, INC.	
DRAWN	<i>RA</i>	PORT HADLOCK, WA	
CHECKED	<i>RA</i>	DRAWING NO.	REV. F
MFG. APPR.	<i>RA</i>	D2750	SHEET 7 OF 11
APPROVED	<i>RA</i>	TITLE	SCALE
DE APPR.	<i>RA</i>	350 SKIDTUBE ASSEMBLY	
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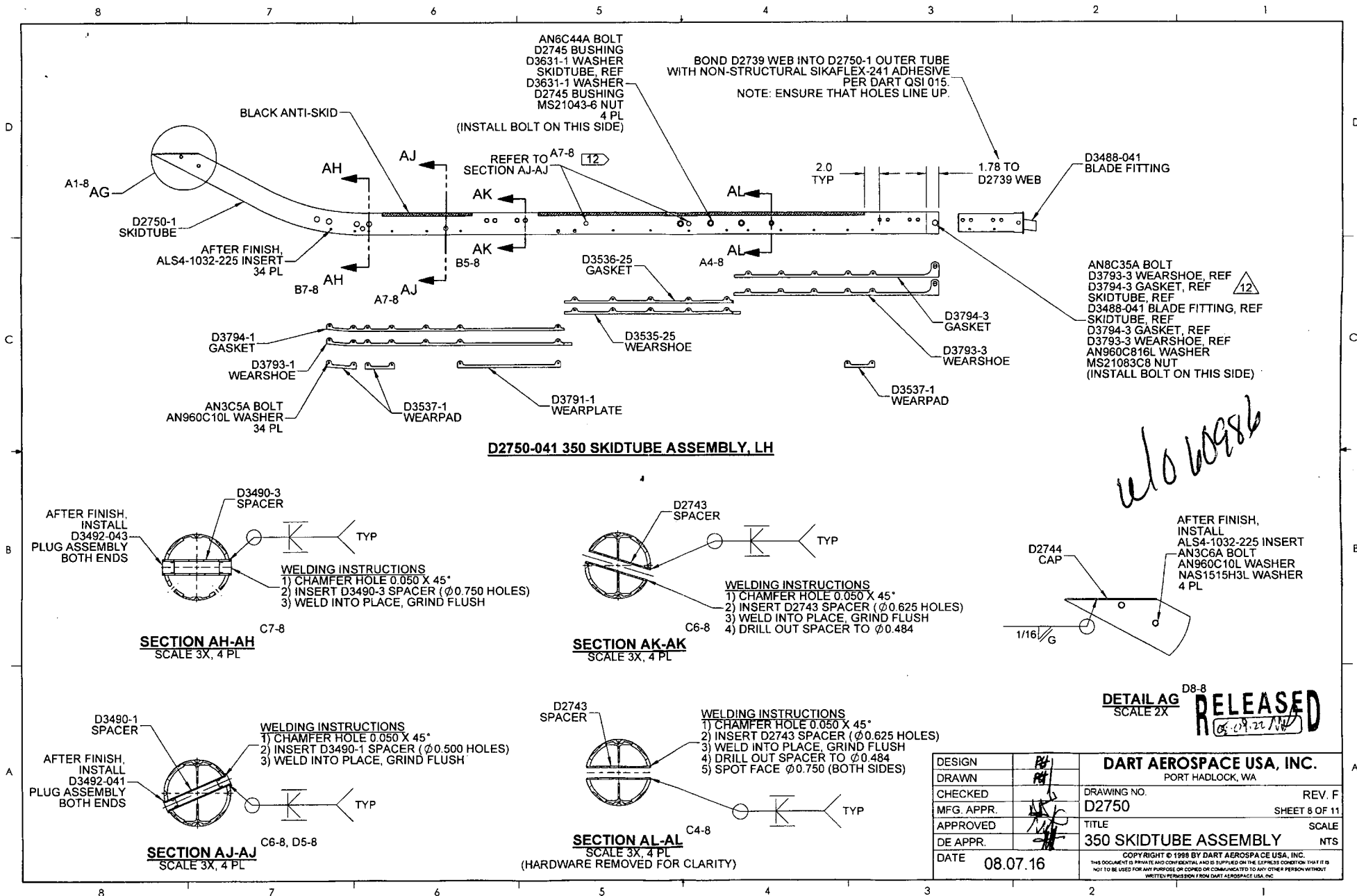
W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries



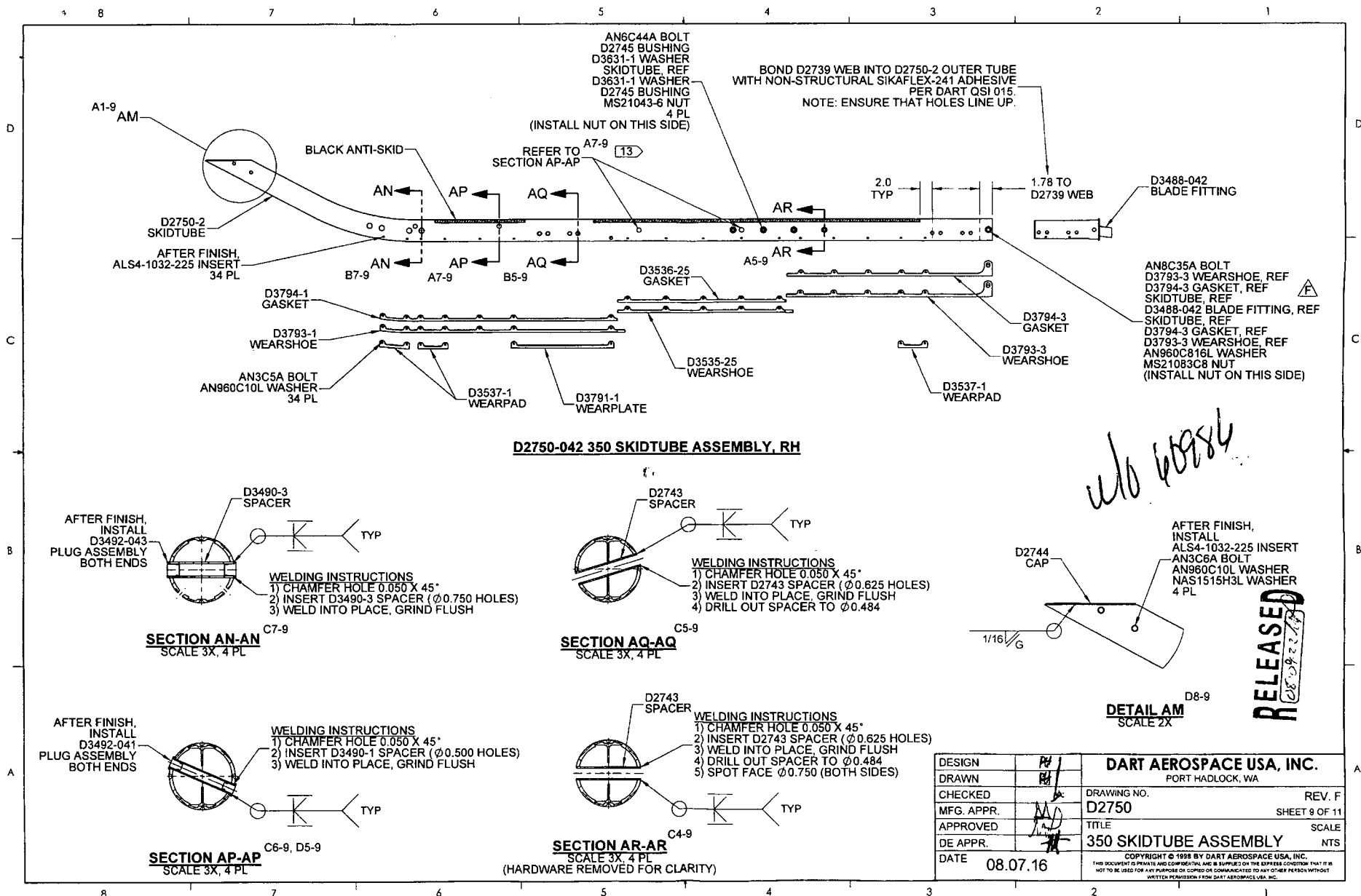
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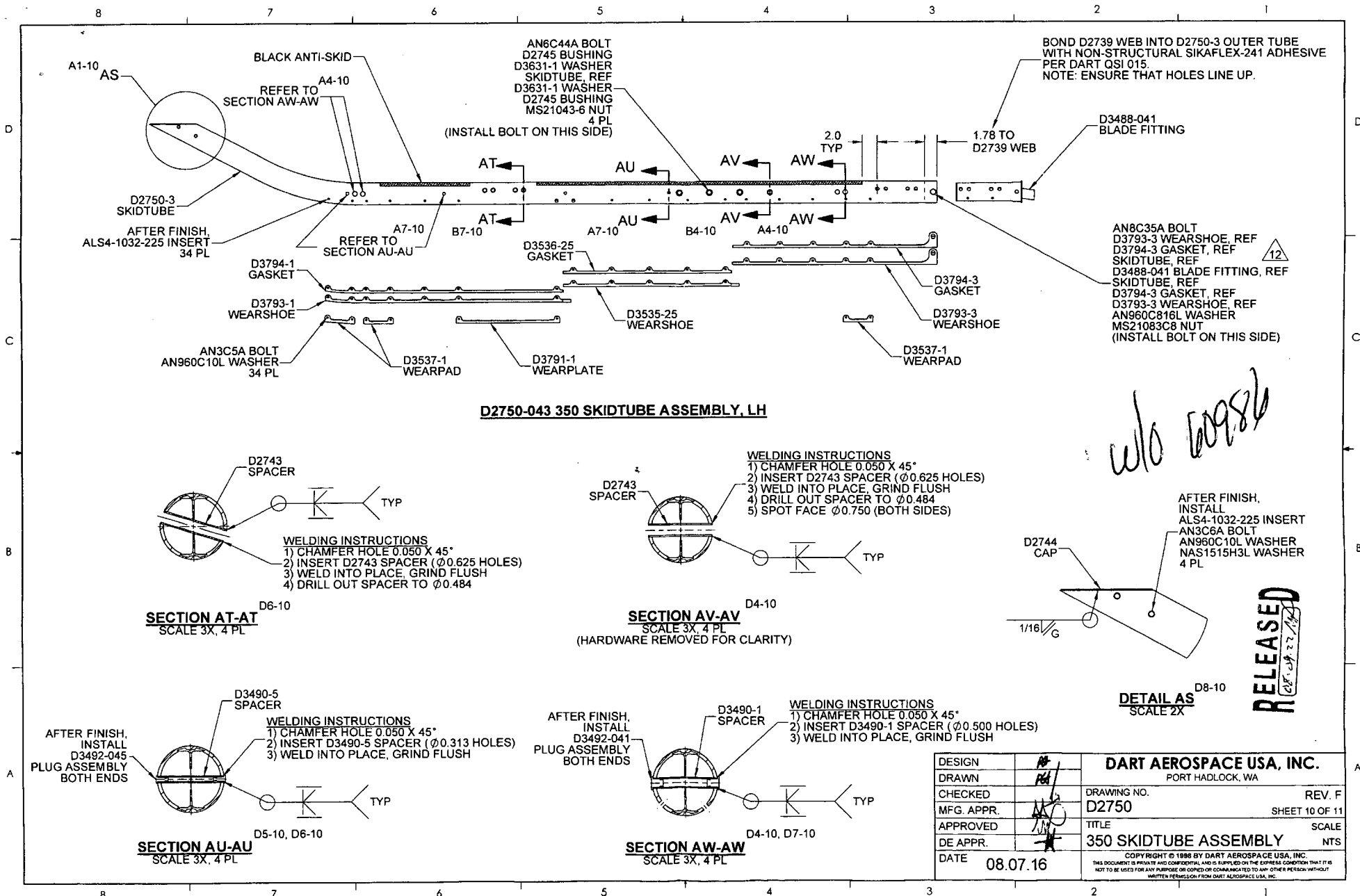
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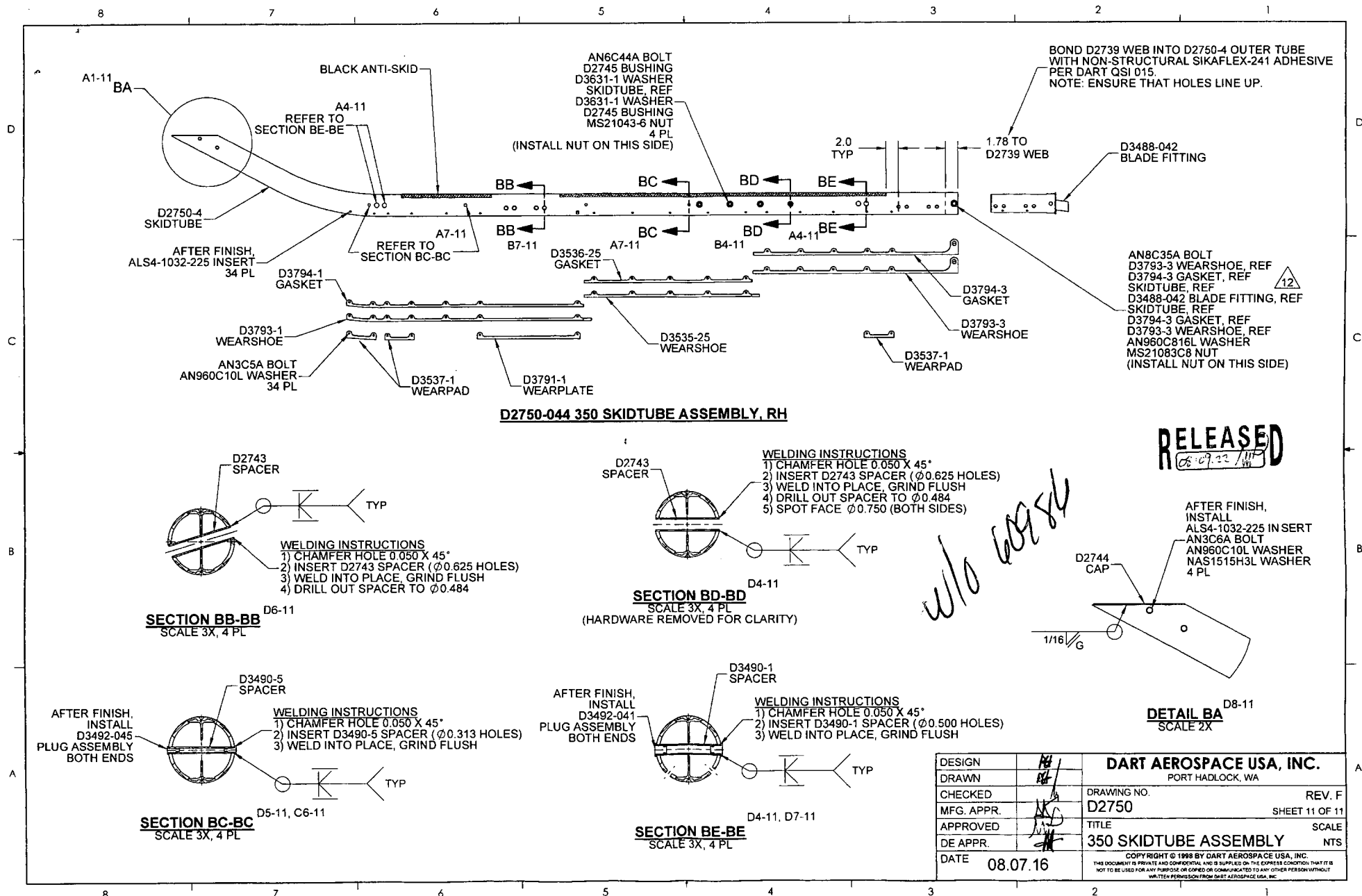
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 236

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barday Elliott
Job number: 60988
Part number: D350-636-012
Description: 350 skid tube
Welding Process: Tig[☒] Mig[☐]
Base material: Aluminium
Current: AC[☒] DC[☐]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[☐]
Penetration: pass[☒] fail[☐]

UNACCEPTABLE

Cracks: pass[☒] fail[☐]
Undercut: pass[☒] fail[☐]
Pin holes: pass[☒] fail[☐]
Overlap (cold lap): pass[☒] fail[☐]
Porosity (surface): pass[☒] fail[☐]
Coloration: pass[☒] fail[☐]

Qualifier [Signature] Date of Test Coupon 10.08.12

Welder [Signature] Date of Test Coupon 10.08.12

The above named individual is qualified in accordance with AWS D17.1.2001 to weld